

1 1. A method comprising:
2 assigning a number of stall cycles between a first and a second instruction;
3 and
4 scheduling said first and second instructions for execution based on the
5 assigned stall cycles.

1 2. The method of claim 1, further comprising:
2 using the number of maximum possible pipeline stall cycles between said
3 first and second instructions to indicate the data dependency therebetween.

1 3. The method of claim 2, further comprising:
2 extending a register scoreboard that keeps track of the data dependency.

1 4. The method of claim 3, further comprising:
2 maintaining a count of issue latency for said first and second instructions.

1 5. The method of claim 3, further comprising:
2 maintaining a count for the number of cycles from start to end of the issue
3 of said first and second instructions.

1 6. The method of claim 3, further comprising:
2 maintaining a count for pipeline stalls between said first instruction and a
3 previous instruction.

1 7. The method of claim 3, further comprising:
2 extending the register scoreboard by m rows and m columns to keep track
3 of the maximum possible pipeline stall cycles.

1 8. The method of claim 7, further comprising:
2 keeping track of the first non-zero value from right to left in the m-th row
3 of the register scoreboard to reorder said first instruction.

1 9. The method of claim 7, further comprising:
2 keeping track of the first non-zero value from top to bottom in the m-th
3 column of the register scoreboard to reorder said first instruction.

1 10. The method of claim 3, further comprising:
2 keeping track of an instruction that causes pipeline stall.

1 11. An apparatus comprising:
2 a register to store a number of stall cycles between a first and a second
3 instruction; and
4 a compiler coupled to schedule said first and second instructions for
5 execution based on the assigned stall cycles.

1 12. The apparatus of claim 11, wherein said compiler uses the number of
2 maximum possible pipeline stall cycles between said first and second instructions to
3 indicate data dependency therebetween.

1 13. The apparatus of claim 12, wherein said register is extended by m-rows
2 and m-columns to keep track of maximum possible pipeline stall cycles.

1 14. The apparatus of claim 13, wherein said compiler to keep track of the first
2 non-zero value from right to left in m-th row to reorder said first instruction.

1 15. The apparatus of claim 13, wherein said compiler to keep track of the first
2 non-zero value from top to bottom in the m-th column to reorder the first instruction.

1 16. A system comprising:
2 a non-volatile storage storing instructions;
3 a processor to execute at least some of the instructions to provide a virtual
4 machine that assigns a number of stall cycles between a first and a second instruction and
5 schedules said first and second instructions for execution based on the assigned stall
6 cycles.

1 17. The system of claim 16, further comprising:
2 a register to store dependency data between said first and second
3 instructions.

1 18. The system of claim 17, further comprising:
2 a compiler coupled to schedule said first and second instructions for
3 execution based on the maximum possible pipeline stall cycles.

1 19. The system of claim 16, wherein said register is a register scoreboard.

1 20. The system of claim 17, wherein said compiler is just-in-time compiler for
2 an object-oriented programming language..

1 21. An article comprising a computer readable storage medium storing
2 instructions that, when executed cause a processor-based system to:
3 assign a number of stall cycles between a first and a second instruction;
4 and
5 schedule said first and second instructions for execution based on the
6 assigned stall cycles.

1 22. The article of claim 21, comprising a medium storing instructions that,
2 when executed cause a processor-based system to:
3 use the number of maximum possible pipeline stall cycles between said
4 first and second instructions to indicate the data dependency therebetween.

1 23. The article of claim 22, comprising a medium storing instructions that,
2 when executed cause a processor-based system to:
3 extend a register scoreboard that keeps track of the data dependency.

1 24. The article of claim 23, comprising a medium storing instructions that,
2 when executed cause a processor-based system to:
3 maintain a count of issue latency for said first and second instructions.

1 25. The article of claim 23, comprising a medium storing instructions that,
2 when executed cause a processor-based system to:
3 maintain a count for the number of cycles from start to end of the issue of
4 said first and second instructions

1 26. The article of claim 23, comprising a medium storing instructions that,
2 when executed cause a processor-based system to:
3 maintain a count for pipeline stalls between said first instruction and a
4 previous instruction.

1 27. The article of claim 23, comprising a medium storing instructions that,
2 when executed cause a processor-based system to:
3 extend the register scoreboard by m rows and m columns to keep track of
4 the maximum possible pipeline stall cycles.

1 28. The article of claim 27, comprising a medium storing instructions that,
2 when executed cause a processor-based system to:
3 keep track of the first non-zero value from right to left in the m-th row of
4 the register scoreboard to reorder said first instruction.

1 29. The article of claim 27, comprising a medium storing instructions that,
2 when executed cause a processor-based system to:
3 keep track of the first non-zero value from top to bottom in the m-th
4 column of the register scoreboard to reorder said first instruction.

1 30. The article of claim 23, comprising a medium storing instructions that,
2 when executed cause a processor-based system to:
3 keep track of an instruction that causes pipeline stall.